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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of Deployment of Wireline Services Offering Advanced Telecommunications Capability	CC Docket No. 98-147

COMMENTS OF PARADYNE CORPORATION

To promote innovation and investment in high-speed, high-capacity services, Paradyne Corporation ("Paradyne") urges the Commission to encourage vigorous competition among competing technologies while ensuring access to the local loops presently controlled by the incumbent local exchange carriers ("ILECs"). Paradyne applauds the Commission's efforts to address these issues in its notice of proposed rulemaking in the above-captioned proceeding.[1]

Paradyne is a leading developer and supplier of network access products, facilitating high-speed access to global networks for communications, computing, and information services. Recognized as the market leader in channel service units and data service units, Paradyne supplies its analog products, digital access products, Hotwire™ DSL products and an extensive array of frame relay and access multiplexers to Network Service Providers, Internet Service Providers ("ISPs"), Frame Relay Service Providers, and commercial end users. Paradyne's

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[1] *See In the Matter of Deployment of Wireline Services Offering Advanced Telecommunications Capability, Memorandum Opinion and Order and Notice of Proposed Rulemaking*, FCC 98-147 (rel. Aug. 7, 1998) ("NPRM"); Public Notice, *Common Carrier Bureau Establishes Revised Pleading Cycle for Comments in Section 706 Notice of Inquiry, FCC 98-187, and Deployment of Advanced Telecommunications Capability Notice of Proposed Rulemaking, FCC 98-188*, DA 98-1624 (rel. Aug. 12, 1998).

Hotwire™ products solve the last mile bottleneck for ISPs by providing high-speed, low-cost Internet access over existing copper telephone lines, which currently reach virtually 98 percent of all U.S. homes and businesses.

In these comments, Paradyne addresses two principal aspects of the Commission's NPRM. *First*, Paradyne urges the Commission to foster technology-neutral xDSL deployment while ensuring spectral compatibility, pursuant to national, non-discriminatory standards. *Second*, Paradyne urges the Commission to grant competitive local exchange carriers ("CLECs") sufficient access to the existing ILEC-controlled local loops in order to ensure competition and quality in the provision of advanced services.

I. THE COMMISSION MUST FOSTER TECHNOLOGY-NEUTRAL XDSL DEPLOYMENT WHILE ENSURING SPECTRAL COMPATIBILITY, PURSUANT TO NATIONAL, NON-DISCRIMINATORY STANDARDS

Paradyne proposes to address the concerns of spectral compatibility through FCC and other national standards.[2] To address the spectral compatibility of customer premises equipment, Paradyne proposes that the Commission revise its network equipment registration rules in Part 68 to include within their scope xDSL equipment. The Commission should expeditiously amend Section 68.308 to specify generic signal power constraints without favoring any particular technology.[3] To address the spectral compatibility of central office equipment, Paradyne favors technology-neutral spectral compatibility requirements that may be used in much the same way as industry standards or network disclosure documents are used today to protect the network.

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[2] *See* NPRM ¶¶ 159-162.

[3] *See* 47 C.F.R. § 68.308.

The physical constraints of the loop plant can never preclude the interference effects of one xDSL technology upon itself or other xDSL technologies. It is therefore technically infeasible to expect any type of xDSL equipment to avoid causing at least some degree of interference. The key is to *minimize* the interference effects both at the transmitter and receiver and accept the reality that other xDSL and legacy services may be present in the loop plant. Too often, spectral compatibility concerns are raised simply as a means to thwart competition; many proposed signal power standards serve only to advantage or disadvantage particular technologies and competitors. The Commission should therefore recognize the value of generic, power spectral density masks—as proposed by Bellcore—as a technically sound and equitable way of demonstrating an equipment's spectral compatibility in a controlled laboratory environment.[4]

Paradyne supports the underlying principles of sub-loop unbundling as articulated by the Commission.[5] Because it is technically feasible to split the bandwidth of the local loop into defined segments, it is therefore possible to tender these segments as separate commodities. The explosive growth of the Internet and the increasing popularity of telecommuting have fueled customer demand for second phone lines. Historically, however, telephone companies have engineered their loop plant to provide 1.5 lines per household. The Commission can and should address the shortage of residential phone line capacity through sub-loop unbundling.

Paradyne believes that the Commission should allow two different service providers to offer xDSL services using equipment that may have different line transmission schemes, *e.g.*, Carrierless Amplitude Phase Modulation, Discrete Multitone, and Quadrature Amplitude

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[4] *See* "Generic Approach and Common Specifications of Transmitting Power Spectral Density Mask for Twisted-Pair Loop Transmission Systems," Bellcore Contribution T1E1.4/98-030 (March 4, 1998).

[5] *See* NPRM ¶ 162.

Modulation such as Paradyne's MVL™.[6] Each transmission scheme has its own advantages and disadvantages. Furthermore, the sheer variety of loop conditions and inside building wiring considerations will often favor one system over another. Indeed, in certain cases, one technology will deliver admirable performance while another will simply not work at all. The Commission should permit carriers and end-users to make choose transmission schemes according to their needs.

Similarly, the CLEC should be free to offer broadband services over longer loop distances than the ILEC may choose to offer. To offer these services, the CLECs may require alternative xDSL technologies such Paradyne's MVL™ technology. The Commission should not allow an ILEC to impose its choice of equipment or transmission scheme on a CLEC. Otherwise, the Commission would undermine a key objective of the Telecommunications Act of 1996:

> One of the fundamental goals of the Telecommunications Act of 1996 [1996 Act] is to promote innovation and investment by all participants in the telecommunications market place, both incumbents and new entrants, in order to stimulate competition for all services, including advanced services.[7]

Equipment choice need not be limited to standard-based solutions in order to achieve spectrum compatibility. Instead, generic spectrum compatibility requirements, coupled with robust, xDSL modulation techniques, can aptly address this issue.

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[6] MVL™ (for "Multiple Virtual Lines") is a Paradyne proprietary offering that provides up to 768 kbps data rates concurrent with POTS service.

[7] NPRM ¶ 2.

The Commission has sought comment on whether or not it should adopt industry standards as the basis for national spectrum management requirements.[8] While Paradyne does not oppose this proposal in principle, it does oppose recent interest within the industry ANSI Committee T1E1.4 to adopt targeted PSD masks[9] to limit the types of systems deployed in the loop. Paradyne opposes this approach for two reasons. *First*, the targeted PSD mask approach stifles innovation by assuming from the outset that existing ILEC equipment and technologies should automatically be protected from any newly developed equipment and technologies that may compete with the ILEC. *Second*, the targeted PSD mask approach reflects efforts by large manufacturers and the ILECs they serve—which dominate the T1E1.4 Committee—to stymie CLECs through the standard-setting process.

Finally, Paradyne supports the Commission's view that uniform national standards are necessary for central office located xDSL equipment in order to provide network protection.[10] Bellcore's NEBS requirements demonstrate how manufacturers can address uniform electrical safety and electromagnetic compatibility criteria. It would be extremely difficult for manufacturers to cope with regional requirements that could prove to be mutually exclusive thus presenting a multitude of design, configuration, and distribution problems for manufacturers.

Such national standards should apply equally to ILECs and CLECs, with one exception: any requirement that an ILEC imposes upon itself concerning equipment reliability and

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[8] *See id.*, ¶ 160.

[9] The term "targeted PSD mask" refers to signal power limitations expressed in terms of dBm/Hz versus frequency such that the mask pertains to a unique line transmission scheme such as the non-echo cancelled DMT system specified in the draft ANSI Standard T1.413, Issue 2.

[10] *See* NPRM ¶ 163.

performance should not be imposed upon a CLEC. The CLEC should be held to standards to pertain to such hazards as fire, electrical safety, EMC, and spectral compatibility but should be free to specify its own performance and reliability criteria.

II. THE COMMISSION MUST GUARANTEE SUFFICIENT ACCESS TO LOCAL LOOPS TO ENSURE COMPETITION AND QUALITY IN THE PROVISION OF ADVANCED SERVICES

The Commission should grant CLECs sufficient access to the existing ILEC-controlled local loops in order to ensure competition and quality in the provision of advanced services. To ensure sufficient access, the Commission must adopt or modify rules in the six following areas: (1) provision of advanced services through a separate affiliate; (2) collocation equipment; (3) allocation of space; (4) space exhaustion; and (5) loops and operations support systems; and (6) unbundling of loops passing through remote terminals.

A. PROVISION OF ADVANCED SERVICES THROUGH A SEPARATE AFFILIATE

Regarding the provision of advanced services through a separate affiliate,[11] Paradyne concurs with the Commission's decision to allow ILECs to enter the advanced services market through separate affiliates. Paradyne remains concerned that the Commission's proposal for separate officers, directors, and employees does not address the fact that these persons will, more likely than not, be former officers, directors, and employees of the ILEC who will maintain close ties to the ILEC, regardless of any structural separation.[12] Nevertheless, Paradyne views the separate affiliate proposal as the only viable alternative to a ban on ILEC provision of advanced

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[11] *See id.*, ¶¶ 85-88.

[12] *See id.*, ¶ 96.

services or a rule that permits ILEC provision of advanced services on a fully integrated basis. Only the separate affiliate proposal would maximize customer choice among service providers.

Given that ILECs offer lucrative data services such as ISDN and T1, they face disincentives in offering new high-speed access services that would compete with their existing services. Affiliated and unaffiliated CLECs, however, face no such disincentives and are better-positioned to offer more innovative xDSL solutions to meet customer demand for economical, higher speed data services.

B. COLLOCATION EQUIPMENT

Regarding collocation equipment,[13] Paradyne agrees with the Commission's tentative conclusion that "incumbent LECs should not be permitted to impede competing carriers from offering advanced services by imposing unnecessary restrictions on the type of equipment that competing carriers may collocate."[14] Certain types of switching equipment, such as routers and packet switching equipment, are essential to provide access to broadband information services. Paradyne sees no practical reason why an ILEC should be permitted to deny the collocation of the CLEC's switching equipment. By allowing a CLEC the freedom to collocate its switching equipment with its Digital Subscriber Line Access Multiplexer ("DSLAM") equipment—or allowing the CLEC to collocate DSLAM equipment with operational switching functions—the Commission would lower the CLEC's overall costs—which would translate into lower costs and a higher quality of service for the consumer.

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[13] *See id.*, ¶¶ 126-135.

[14] *See id.*, ¶ 129.

C. ALLOCATION OF SPACE

Regarding the allocation of space,[15] Paradyne supports the Commission's assessment that alternative collocation arrangements will foster the deployment of advanced services by new entrants. The cost of equipment cages and the minimum space requirements created by the cages have served as deterrents to CLECs. Paradyne views as reasonable alternatives either shared equipment cages or elimination altogether of the equipment cage requirement.

D. SPACE EXHAUSTION

Regarding space exhaustion,[16] Paradyne suggests that the Commission could permit an adjacent central office. Under such a scheme, a CLEC would install its equipment in a building in close proximity to the central office. The Commission could specify the maximum allowable distance between the two buildings in order to ensure spectral compatibility.

E. LOOPS AND OPERATIONS SUPPORT SYSTEMS

Regarding loop operations support systems,[17] CLECs should have access to the same information about loops as do the ILECs. This includes the availability of vacant loops, loop design, attached devices, and loop condition. This information is vital to the successful deployment of xDSL services. Access to this information should be made available in a timely fashion through electronic means, preferably through a web-based interface.

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[15] *See id.*, ¶¶ 136-138.

[16] *See id.*, ¶ 145.

[17] *See id.*, ¶ 157.

F. UNBUNDLING LOOPS PASSING THROUGH REMOTE TERMINALS

Regarding the unbundling of loops passing through remote terminals, Paradyne concurs with the Commission's decision to require that ILECs provide loops capable of transporting high-speed digital signals where technically feasible.[18] Customers desiring low cost, broadband services that are served by a Digital Loop Carrier define a sizable market share. To address this segment of the market, CLECs must be able to provision xDSL equipment on the loop plant from the remote terminal ("RT") to the subscriber while leasing a high-speed path from the RT back to the central office. While the physical constraints of the RT are acknowledged as an impediment, the public will still demand this service.

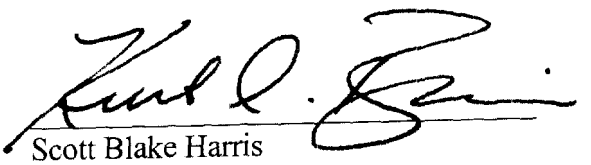
[18] *See id.*, ¶ 167.

CONCLUSION

For the foregoing reasons, the Commission should adopt rules for customer premises equipment and embrace requirements for central office equipment that foster technology-neutral xDSL deployment, while ensuring spectral compatibility. Furthermore, the Commission should adopt rules and policies to guarantee sufficient access to the local loop by CLECs.

Respectfully submitted,

PARADYNE CORPORATION



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CERTIFICATE OF SERVICE

I, Kent D. Bressie, do hereby certify that copies of the foregoing Comments of Paradyne Corporation have been sent by hand delivery on this 25th day of September, 1998, to the following:

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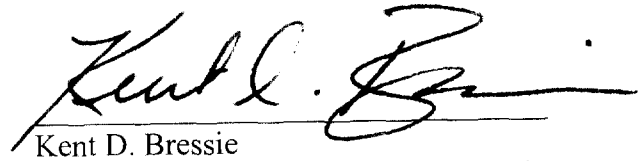

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